# Influenza A (H5N1): Indications for Testing and Infection Control Precautions
# Missouri Department of Health and Senior Services, June 13, 2006

## Enhanced Surveillance and Indications for Avian Influenza A (H5N1) Testing

The Centers for Disease Control and Prevention (CDC) recommends maintaining enhanced surveillance efforts by state and local health departments, hospitals, and clinicians to identify patients at increased risk for avian influenza A (H5N1) as described in the U.S. Department of Health & Human Services (HHS) Pandemic Influenza Plan (which is available at http://www.hhs.gov/pandemicflu/plan/). Current guidelines for enhanced surveillance are as follows.

Testing for avian influenza A (H5N1) virus infection is recommended for a patient who has an illness that:

- requires hospitalization or is fatal; **AND**
- has or had a documented temperature of ≥38°C (≥100.4° F); **AND**
- has radiographically confirmed pneumonia, acute respiratory distress syndrome (ARDS), or other severe respiratory illness for which an alternate diagnosis has not been established; **AND**
- has at least one of the following potential exposures within 10 days of symptom onset:

  A) History of travel to a country with influenza H5N1 documented in poultry, wild birds, and/or humans,† **AND** had at least one of the following potential exposures during travel:
  - direct contact with (e.g., touching) sick or dead domestic poultry;
  - direct contact with surfaces contaminated with poultry feces;
  - consumption of raw or incompletely cooked poultry or poultry products;
  - direct contact with sick or dead wild birds suspected or confirmed to have influenza H5N1;
  - close contact (approach within 1 meter [approx. 3 feet]) of a person who was hospitalized or died due to a severe unexplained respiratory illness;

  B) Close contact (approach within 1 meter [approx. 3 feet]) of an ill patient who was confirmed or suspected to have H5N1;

  C) Worked with live influenza H5N1 virus in a laboratory.

Testing for avian influenza A (H5N1) virus infection can be considered on a case-by-case basis, in consultation with local and state health departments, for:

- A patient with mild or atypical disease‡ (hospitalized or ambulatory) who has one of the exposures listed above (criteria A, B, or C); **OR**
- A patient with severe or fatal respiratory disease whose epidemiological information is uncertain, unavailable, or otherwise suspicious but does not meet the criteria above (examples include: a returned traveler from an influenza H5N1-affected country whose exposures are unclear or suspicious, a person who had contact with sick or well-appearing poultry, etc.)

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Source: CDC Health Update: Updated Interim Guidance for Laboratory Testing of Persons with Suspected Infection with Avian Influenza A (H5N1) Virus in the United States, June 07, 2006.
http://www.phppo.cdc.gov/HAN/ArchiveSys/ViewMsgV.asp?AlertNum=00246

† For a listing of influenza H5N1-affected countries, visit the CDC website at http://www.cdc.gov/flu/avian/outbreaks/current.htm; the OIE website at http://www.oie.int/eng/en_index.htm; and the WHO website at http://www.who.int/csr/disease/avian_influenza/en/.

‡ For example, a patient with respiratory illness and fever who does not require hospitalization, or a patient with significant neurologic or gastrointestinal symptoms in the absence of respiratory disease.

The primary point of contact at the Missouri Department of Health and Senior Services (DHSS) is Eddie Hedrick - Emerging Infections Coordinator - 573-522-8596, or e-mail Eddie.Hedrick@dhss.mo.gov. Evenings, weekends or holidays call 800-392-0272. Mr. Hedrick should be contacted if testing for avian influenza is being considered.

Laboratory Testing Procedures

1. After consultation with Eddie Hedrick and determination that testing is necessary, contact the Missouri State Public Health Laboratory (MSPHL) at 573-751-3334 or 800-392-0272 prior to collecting lab specimens. This will assist in ensuring that the proper specimens are obtained in the right quantity, and that they are packed and transported properly. The lab will also be able to track the specimens if they have been notified ahead of time.
2. The preferred kit for this type of specimen is any kit suitable for an infectious disease substance (i.e. SARS box, Rash kit or Rabies box). Many local public health agencies have a box on site or one should be available from the Senior Epidemiologist in the region. Boxes can also be ordered from MSPHL.
3. When specimens are collected, multiple specimens should be obtained, and multiple specimen types should be considered. The CDC laboratory has requested that they receive fresh clinical specimens regardless of what tests are done.
4. Specific instructions for collecting laboratory specimens may be found at http://www.dhss.missouri.gov/Lab/Virology/sphl_avianflu_instructions.pdf.

Virus Culture. (Conducted by CDC) Highly pathogenic avian influenza A (H5N1) is classified as a select agent, and culturing of clinical specimens for influenza A (H5N1) virus must be conducted under laboratory conditions that meet the requirements for Biosafety Level (BSL) 3 with enhancements. These enhancements include controlled access double-door entry with change room and shower, use of respirators, decontamination of all wastes, and showering out of all personnel. Laboratories working on these viruses must be certified by the U.S. Department of Agriculture. CDC recommends that virus isolation studies be conducted on respiratory specimens from patients who meet the above criteria only if requirements for BSL 3 with enhancements can be met.

Polymerase Chain Reaction (PCR) and Commercial Antigen Testing. (Conducted by MSPHL) Clinical specimens from suspect influenza A (H5N1) cases may be tested by PCR assays under standard BSL 2 conditions in a Class II biological safety cabinet. In addition, commercial antigen detection testing can be conducted under standard BSL 2 conditions used to test for influenza viruses.

Specimens from persons meeting the above clinical and epidemiologic criteria will be sent to CDC by MSPHL if the specimen tests positive for influenza A virus by PCR or by antigen detection testing.

MSPHL will accept specimens from persons meeting the above clinical criteria even if they test negative by influenza rapid diagnostic testing. (This is because the sensitivity of commercially available rapid diagnostic tests for influenza may not always be optimal.)

**Interim Recommendations: Infection Control Precautions for Influenza A (H5N1)**

Infection control precautions for H5N1 currently remain unchanged from the CDC interim recommendations issued on February 3, 2004. (Note, however, that CDC is now in the process of revising these recommendations.) All patients who present to a health-care setting with fever and respiratory symptoms should be managed according to recommendations for Respiratory Hygiene and Cough Etiquette and questioned regarding their recent travel history. Isolation precautions identical to those recommended for SARS should be implemented for all hospitalized patients diagnosed with, or under evaluation for, influenza A (H5N1) as follows:

- Standard Precautions
  - Pay careful attention to hand hygiene before and after all patient contact
- Contact Precautions
  - Use gloves and gown for all patient contact
- Eye protection
  - Wear when within 3 feet of the patient
- Airborne Precautions
  - Place the patient in an airborne isolation room (i.e., monitored negative air pressure in relation to the surrounding areas with 6 to 12 air changes per hour).
  - Use a fit-tested respirator, at least as protective as a NIOSH-approved N-95 filtering face piece respirator, when entering the room.

These precautions should be continued for 14 days after onset of symptoms, or until an alternative diagnosis is established, or until diagnostic test results indicate that the patient is not infected with H5N1 influenza A virus (see the above information on laboratory testing procedures). For additional information regarding these and other infection control procedures, see http://www.cdc.gov/flu/avian/professional/infect-control.htm.